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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/041,538	03/11/1998	DENIS MENARD	1948-4293USI	3407

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MORGAN & FINNEGAN
345 PARK AVENUE
NEW YORK, NY 10154

EXAMINER

SINGH, ARTI R

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/041,538

Applicant(s)

MENARD ET AL.

Examiner

Ms. Arti Singh

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-11,25,28 and 33-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-11,25,28 and 33-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The Examiner has carefully considered Applicant's amendments, references and accompanying remarks filed on 03/13/2003. Amendments to independent claims 1 and 33 have been entered, however they do not overcome the 112 rejection made in paragraphs 2 and 3 of the previous office action. Applicant has amended the claims to state "a range between a nonzero percentage proximate 0% and approximately 40%." This range still encompasses the lack of a third component the filler, which can be zero, and thus claims 1-7, 9-11, 25, 28 and 33-39 still stand rejected. This action is non-final as a new rejection is being provided.

Claim Rejections - 35 USC § 112(restated)

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-7, 9-11, 25, 28 and 33-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In independent claims 1 and 33 Applicant claims a third substance, that is a filler, wherein it is found to be "present" in approximately 0% to 40% by weight. This implies that there is some percentage of the filler present in the composite, however the limit of "zero" implies that nothing can be present. Please claim one or the other. All dependant claims are also rejected as they are dependant from rejected base claims. Applicant has amended the claims by adding the limitation a nonzero percentage proximate to zero. Webster's dictionary defines "proximate" to mean

Art Unit: 1771

immediately preceding or following, which would still encompass no filler. Please amend the claims with a specific number to which the instant specification has support for.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-5, 9, 10, 11, 28 and 33-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Kearsey (USPN 5,585,166). The salient features of the invention of Kearsey relates to a friction lining which a device for transmits torque, in particular friction clutches, synchronizers or brakes, the friction lining being fastened on a carrier body in order to form a friction surface and the torque being transferred to a counter surface, whereby the friction lining is constructed from at least two different, porous layers, of which one is fastened on the carrier body. The porous substrate, made of a cellulose base with synthetic fibers and filler, exists as a support for the friction layer, which is also porous, fastened to the substrate and is made of fibers bonded with a thermoset resin (column 1, lines 5-17). This is achieved in that a friction lining, cooled with a fluid or lubricant, a porous substrate exhibiting a

Art. Unit: 1771

weight ranging from 200 to 1500 g/m² and a friction layer, which is bound to the substrate, is made of synthetic fibers which are bonded with a thermoset resin and are, e.g., boron, carbon, aramid, which exhibits as many fibrils as possible, glass, stone or ceramic, preferably carbon, and that the friction layer exhibits a higher porosity than the substrate (column 2, lines 45-50). The substrate preferably contains a heat-resistant thermoset resin content ranging from 20 to 60% by wt. of its total weight, e.g., phenolic resins (resol or novolak), epoxy resin, melamine resin, silicone resin, acrylic resin, and modified resins based thereon, preferably phenolic resol resin in an amount ranging from 28 to 36% by wt. of the total weight of the substrate. The substrate designed in this manner is relatively simple to produce, relatively inexpensive and exhibits porosity such that it can absorb fluid or lubricant for the cooling operation. According to another feature of the invention, the friction layer can be made of synthetic fibers and thermoset resin, amounting to a least 70% by wt. of the total weight, and exhibit a percentage of heat-resistant thermoset resin, which ranges from 25 to 60% by wt. of the total weight of the friction layer, e.g., phenolic resins (resol or novolak), epoxy resin, melamine resin, silicone resin, acrylic resin, and the like, preferably phenolic resol resin, ranging from 45 to 55% by wt. of the total weight of the friction layer. According to the invention, the heat resistant thermoset resin of the friction layer can contain up to 50% by wt. of filler, preferably a filler made of carbon particles. Thus, a reliable bond between the components of the friction layer is obtained. According to the invention, an advantageous friction layer results from the preferably non-woven synthetic fibers of the friction layer comprising 10 to 75% by wt. of the total weight of the friction layer and exhibiting a fiber length ranging from 3 to 25 mm, preferably from 6 to 15 mm, with a fiber diameter ranging from 3 to 50 μ m, whereby preferably the amount of carbon fibers ranging from 50 to 60% by wt. of the total weight with a length ranging from 6 to 15 mm and a fiber

Art. Unit: 1771

diameter of 7 μ m. The fibers are distributed and oriented nonuniformly over the entire thickness of the friction layer, thus resulting in especially good friction properties.

In another design of the invention the filler in the substrate has an absorbent structure, is made preferably of crystalline silicate and comprises 2 to 20% by wt. of the total weight of the substrate, preferably at least 10% by wt., whereby the filler can absorb more than 2.5 times its own weight in oil. The resulting large absorptive capacity guarantees that the friction lining will be cooled reliably even under high load (column 3, line 33- column 4, line 9).

Claim Rejections - 35 USC § 103

6. Claims 6, 7, 25 and 35-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kearsey (USPN 5,585,166) as applied to claims 1-5, 9-11, 28 and 33-34 above, and further in view of Yang (USPN 4,836,507). Kearsey teaches what is set forth above but does not explicitly teach that the fillers may be in the form of pulps.

Yang teaches that aramid pulps are proven to be excellent for the reinforcement elastomers or resins (column 1, lines 54-56). Yang further discloses that because of its small size, it is relatively easily dispersed uniformly in a matrix polymer (column 1, lines 54-56). He teaches this in the art of friction materials such as brake shoes and pads, in clutch facings, etc. (column 1, lines 57-58). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to have incorporated the teachings of Yang in Kearsey. One of ordinary skill in the art would have been motivated to do this in order to provide filler, which is uniformly dispersible in a matrix polymer.

With regard to claims 35-39, it should be noted that optimizing the percentage of fibers, resin and fillers are considered result effective variables. The greater the amount of either the resin or the fibers directly affects the strength of the composite. Therefore, it

Art.Unit: 1771

would have been obvious to one having ordinary skill in the art at the time the invention was made to have the percentages as set forth in claims 35-39, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have optimized the percentage of fibers or resin content, motivated by the desire to obtain a flexible and porous composite that has high durability and strength.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ms. Arti Singh whose telephone number is 703-305-0291. The examiner can normally be reached on M-F 8:00am to 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-873-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



ars
May 30, 2003

Ms. Arti Singh
Patent Examiner
Art Unit 1771